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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,892	12/29/2005	Marcel Breuwer	NL 030839	6935
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EXAMINER MEHTA, PARIKHA SOLANKI				
ART UNIT 3737		PAPER NUMBER		
MAIL DATE 05/06/2009		DELIVERY MODE PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/562,892

Applicant(s)

BREEUWER, MARCEL

Examiner

PARIKHA S. MEHTA

Art Unit

3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 January 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10, 11, 17, 18 and 20 is/are rejected.
- 7) ☒ Claim(s) 9, 12-16 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION***Specification***

1. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

2. The abstract of the disclosure is objected to because it exceeds 150 words and does not meet the format requirements set forth above. Correction is required. See MPEP § 608.01(b).

Drawings

3. The drawings are objected to because Figures 5 and 6 are not sufficiently illustrative of the claimed invention; element numbers alone do not constitute adequate labeling of empty boxes. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be

Art Unit: 3737

necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claim 7 is objected to because of the following informalities:

Claim 7 is directed towards nothing more than intended use of the claimed invention and therefore fails to limit the structure of the parent claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 7, 8, 11 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Yang et al (Computer Aided Measurement of Local Myocardial Perfusion in MRI. *IEEE* September 1993), hereinafter Yang (1993), of record.

Yang (1993) discloses a computer-readable medium including a first code segmenting selecting at least one image segment with the highest perfusion, wherein such segment constitutes a segment having "normal" and "good" perfusion as claimed (p. 365 col. 2). Yang (1993) also includes code for dividing a myocardium into image segments, determining a time-intensity profile for distribution of Gd-DTPA (i.e., a "contrast agent") in the myocardium, determining and displaying a maximum perfusion speed (i.e., a "perfusion parameter") in each segment, and calculating time-intensity profiles for each segment (p. 365 col. 2). The calculation of the parameter for each segment in the image, wherein the image includes a depiction of both normal and ischemic tissue, constitutes calculation of a "normal perfusion parameter" and calculation of a "relative perfusion parameter" as claimed.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3-5 and 10, 17, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang (1993) in view of Applicant's admitted prior art.

Regarding claims 3-5, Yang (1993) teaches all features of the present invention as previously discussed for claim 1. Yang (1993) does not expressly teach the calculation of a ratio of cardiac perfusion parameters derived at stress and rest for each image segment. Applicant admits that it is known in the art to calculate the MPRI (i.e., "cardiac perfusion parameter") using a ratio of the maximum upslope of the time-intensity profile at stress and at rest (Specification p. 1 paragraph 3). It would have been obvious to one of ordinary skill in the art at the time of invention to have modified Yang (1993) to include code for calculating the ratio of the maximum upslope of the time-intensity profile at stress and at rest to derive the MPRI, as such a modification would require nothing more than the mere combination of known prior art elements to yield predictable results, which has previously been held as obvious and unpatentable over the prior art (*KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385).

Regarding claims 10, 17 and 18, Yang (1993) teaches a workstation executing substantially all claimed processor steps as previously discussed for claims 1 and 11, but does not expressly teach normalization of the maximum upslopes of the image segments. Applicant admits that such normalization is known in the art (Specification p. 1 paragraph 3). It would have been obvious to one of ordinary skill in the art at the time of invention to have modified Yang (1993) to program the processor to determine the maximum upslope of each segment, identify at least one segment with the highest maximum upslope, and normalize the upslopes as taught by the admitted prior art, as such a modification would require nothing more than the mere combination of known elements to yield predictable results, which has previously been held as obvious and unpatentable over the prior art (*KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385).

Art Unit: 3737

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yang (1993) and the admitted prior art as applied to claim 3 above, and further in view of Al-Saadi et al (Noninvasive Detection of Myocardial Ischemia From Perfusion Reserve Based on Cardiovascular Magnetic Resonance. *Circulation*. 101:1397-1383. 2000), hereinafter Al-Saadi (2000), of record.

Yang (1993) and the admitted prior art do not expressly teach the MPRI to be thresholded. In the same field of endeavor, Al-Saadi (2000) teaches a program and method of perfusion assessment including means and steps for determining an MPRI threshold. It would have been obvious to one of ordinary skill in the art at the time of invention to have modified Yang (1993) and the admitted prior art to include code for thresholding the MPRI as taught by Al-Saadi (2000), in order to discriminate between normal and ischemic tissue.

Allowable Subject Matter

10. Claims 9, 12-16 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

11. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PARIKHA S. MEHTA whose telephone number is (571)272-3248. The examiner can normally be reached on M-F, 8 - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571.272.4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3737

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BRIAN CASLER/
Supervisory Patent Examiner, Art Unit
3737

/Parikha S Mehta/
Examiner, Art Unit 3737